

Detailed Action

This Office action is in response to Applicant's communication filed on April 21, 2011.

Allowable Subject Matter

Claims 1, 2, 4, 6-9, 11-15, 17-18, and 19 are allowed.

The following is an examiner's statement of reasons for allowance:

Gullicksen et al. US Patent No. 6,751,189 teaches of a node sending a message with updated topology information to other devices and waits to receive back the message. Mor et al. US Publication No. 2002/0018481 teaches the concept a node resending a message to other nodes when the message is returned to the node. Sampath et al. US Publication No. 2002/0037006 teaches of an indicator that indicates whether a source address has not been learned by in all devices.

However, the prior art of record does not fairly teach or suggest the limitation:

Determining whether other network devices have learned a source address when the source address has been learned previously by examining a learned all devices tag for the source address in the ARL table; and when it is determined that the other network devices have not learned the source address: sending, by a network device, a learning message with the source address to the other network devices; and re-sending, by the network device, the learning message to the other network devices until the learning message is returned to the network device from one of the other network devices.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in telephone interview by Attorney Paul W. Churilla, Reg. No. 47,495 on April 21, 2011.

The application is amended as follows:

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The following listing of claims will replace all prior versions and listing in the application.

IN THE CLAIMS:

1. (Currently Amended) A method of handling datagrams in a network device coupled to other network devices, the method comprising:

receiving an incoming datagram at a port of the network device;

determining an egress port for the incoming datagram based on a destination address contained in the incoming datagram and a lookup of an address resolution lookup (ARL) table;

performing a lookup of the ARL table based on a source address contained in the incoming datagram to determine whether the source address contained in the incoming datagram to determine whether the source address has been learned previously;

writing an entry into the ARL table when the source address has not been learned previously;

determining whether the other network devices have learned the source address when the source address has been learned previously by examining a learned all devices tag for the source address in the ARL table; and

when it is determined that the other network devices have not learned the source address:

sending, by the network device, a learning message with the source address to the other network devices; and

re-sending, by the network device, the learning message to the other network devices until the learning message is returned to the network device from one of the other network devices.

2. (Previously Presented) The method of claim 1, wherein the method further comprises updating a hit bit in the ARL table when the source address has been learned previously.

3. (Cancelled)

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4. (Previously Presented) The method of claim 1, wherein the network device and the other network devices are connected through a ringed connection and continuing to relay the learning message comprises continuing to relay the learning message through the ringed connection.

5. (Canceled)

6. (Previously Presented) The method of claim 4, wherein determining an egress port comprises flooding all ports of the network device with the incoming datagram when the lookup of the ARL table does not find a match with the destination address.

7. (Previously Presented) The method of claim 1, wherein receiving an incoming datagram comprises receiving an incoming data packet.

8. (Currently Amended) A network device coupled to other network devices for handling datagrams comprising:

a plurality of ports for receiving an incoming datagram; one or more datagram processing devices; a computer readable storage medium coupled with the one or more datagram processing devices, the computer readable storage medium having instructions stored thereon, wherein the instructions, when executed by the one or datagram processing devices, provide for implementing:

an address resolution lookup (ARL) table;

means for determining an egress port for the incoming datagram based on a destination address contained in the incoming datagram;

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lookup means for performing a lookup of the ARL table based on a source address contained in the incoming datagram to determine whether the source address has been learned previously;

writing means for writing an entry into the ARL table when the source address has not been learned previously; and

determining means for determining whether the other network devices have learned the source address when the source address has been learned previously by examining a learned all devices tag for the source address in the ARL table; and

relaying means for relaying a learning message with the source address from the network device to the other network devices when it is determined that the other network devices have not learned the source address, wherein the relaying means repeatedly relays the learning message from the network device to the other network devices until the learning message is returned to the network device from one of the other network devices.

9. (Previously Presented) The network device of claim 8, wherein the instructions, when executed by the one or more datagram processing devices, further provide for implementing updating means for updating a hit bit in the ARL table when the source address has been learned previously.

10. (Canceled)

11. (Previously Presented) The network device of claim 8, wherein the network device and the other network devices are connected through a ringed connection and the relaying means comprises a ring relaying means for relaying the learning message through the ringed connection.

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12. (Previously Presented) The network device of claim 8, wherein the network device is connected to the other network devices through one of a stacking port of the network device and an expansion port of the network device.

13. (Previously Presented) The network device of claim 8, wherein the means for determining an egress port comprises a flooding means for flooding all ports of the network device with the incoming datagram when the lookup of the ARL table does not find a match with the destination address.

14. (Currently Amended) A network device coupled to other network devices for handling datagrams comprising:

- a plurality of ports configured to receive an incoming datagram;

- a computer readable storage medium coupled with the one or more datagram processing devices, the computer readable storage medium having instructions stored thereon, wherein the instructions, when executed by the one or datagram processing devices, provide for implementing:

- an address resolution lookup (ARL) table;

- an egress port determiner configured to determine an egress port for the incoming datagram based on a destination address contained in the incoming datagram;

- an ARL table reader configured to perform a lookup of the ARL table based on a source address contained in the incoming datagram to determine whether the source address has been learned previously;

- an ARL table writer configured to write an entry into the ARL table when the source address has not been learned previously; and

- a global address determiner configured to determine whether the other network devices have learned the source address when the source address has been learned previously by examining a learned all devices tag for the source address in the ARL table; and

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a learning message forwarder configured to relay a learning message with the source address from the network to the other network devices when it is determined that the other network devices have not learned the source address, wherein the learning message forwarder is further configured to repeatedly relay the learning message, from the network device to the other network devices until the learning message is returned to the network device from one of the other network devices.

15. (Previously Presented) The network device of claim 14, wherein the instructions, when executed by the one or more datagram processing devices, further provide for implementing an updater configured to update a hit bit in the ARL table when the source address has been learned previously.

16. (Canceled)

17. (Previously Presented) The network device of claim 14, wherein the network device and the other network devices are connected through a ringed connection and the learning message forwarder comprises a ring message forwarder configured to relay the learning message through the ringed connection.

18. (Previously Presented) The network device of claim 14, wherein the network device is connected to the other network devices through one of a stacking port of the network device and an expansion port of the network device.

19. (Previously Presented) The network device of claim 14, wherein the egress port determiner comprises a port flooder configured to flood all ports of the network device with the incoming datagram when the lookup of the ARL table does not find a match with the destination address.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Joo whose telephone number is 571 272-3966. The examiner can normally be reached on Monday to Friday 7:30AM to 4:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Joshua Joo/
Primary Examiner, Art Unit 2445